

U.S. Appl. No. 10/612,490  
Page 6

RECEIVED  
CENTRAL FAX CENTER  
SEP 29 2006

### REMARKS/ARGUMENTS

In the Office Action dated July 3, 2006, claims 13-21 were withdrawn from consideration pursuant to a restriction requirement, and claims 1-12 and 22-27 were rejected in the Office Action made final. In this Proposed Amendment After Final, Applicant cancels claims 6, and 12-21, and proposes amendments to claims 5 and 11 to eliminate issues on appeal. Entry of the proposed amendments is respectfully requested.

Claim 5 has been amended to depend from claim 2 and claim 6 has been canceled. The proposed amendment eliminates any issue regarding double patenting between claims 5 and 6.

Claim 11 and 12 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner has taken the position that because claim 11 recites the limitation "said metal plate" in line 2, there is insufficient antecedent basis for the limitation in the claim. The proposed amendment to claim 1 deletes the words "said metal part" and substitutes therefore "wherein each bipolar plate" which is believed to overcome the rejection. Entry of the proposed amendment and withdrawal of the rejection is respectfully requested.

The rejection of claim 12 is rendered moot by the cancellation of claim 12. Withdrawal of the rejection is respectfully requested.

Claims 1-12 and 22-27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Adlhart et al 3,623,913, in view of Lemelson 5,740,941. The rejection acknowledges that Adlhart et al does not disclose "a doped coating comprising at least one

U.S. Appln. No. 10/612,490  
Page 7

of a doped diamond coating or doped diamond-like coating” as recited in Applicant’s independent claims 1 and 25. The rejection also states:

... It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the bipolar plate of Adlhart et al by substituting the protective coating with a doped diamond coating or doped diamond-like carbon coating of Lemelson because Lemelson teaches a coating that would have provided new and improved structures in articles of manufacture capable of resisting erosion and surface scratching caused by abrasive particles, expansion and contraction due to uneven heating and corrosive effects of chemicals (citing Lemelson column 3, lines 8-20 and column 5, lines 50-61).

Lemelson ‘941 discloses numerous products on which a diamond-like material may be deposited. However, of the estimated 100 plus possible products on which such a coating might be deposited, Lemelson never suggests placing such a coating on a fuel cell bipolar plate. Further, there is no evidence that Lemelson reduced any of these numerous possible devices to practice. The Lemelson disclosure is so broad that the statements therein can only be viewed as pure speculation. Notwithstanding the speculative nature of the disclosure, none of the disclosed devices suggest “a doped diamond coating or a doped diamond-like coating” on or over a fuel cell bipolar plate as recited in independent claims 1 and 25. There is no disclosure of a fuel cell bipolar plate in Lemelson and there is no suggestion that Lemelson coating could be substituted for other known fuel cell bipolar plate coatings with a reasonable expectation of success.

One skilled in the art would *not* have made that combination as of the filing date. Lemelson suggests that his synthetic diamond coating may be applied to a fuel cell electrode (col. 15, lines 52-57). However, a person skilled in the fuel cell art would recognize that fuel cell electrodes are porous as disclosed in Adlhart et al, U.S. Patent No. 3,623,913 (col. 4, lines 48-62).

U.S. Appln. No. 10/612,490  
Page 8

The porosity of the fuel cell electrode allows reactant gases to flow into and through the electrode and to undergo a reaction catalyzed by a catalyst contained in the electrode. Thus, in order for the electrode to still function, the Lemelson synthetic diamond coating over the electrode must be porous to ensure that the reactant gases can flow through the synthetic diamond coating and into the electrode.

However, Adlhart et al, U.S. Patent No. 3,623,913 discloses the bipolar plates are impervious metals, e.g. of gold-coated aluminum (col. 4, lines 66-68) and that the plates may employ 3 mm thick aluminum coating with a thin gold plate as a suitable protection against attack by the electrolyte (85-100% phosphoric acid) (col. 6, lines 61-65 and col. 4, lines 48-54). The proposed substitution of the synthetic diamond coating on the fuel cell electrode of Lemelson for the gold coating of Adlhart et al would result in a bipolar plate coated with a porous synthetic diamond coating. Such a porous coating would not protect the bipolar plate "from the electrolyte" or the corrosive environment of a fuel cell which may include hydrofluoric acid that would attack the bipolar plate through the porous synthetic diamond coating of Lemelson. Thus, the proposed combination and modification is improper because it would render Adlhart unsatisfactory for its intended function (providing an imperious protective coating over the bipolar plate). See MPEP 2143.01(V) which, in part, states:

If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)...

U.S. Appl. No. 10/612,490  
Page 9

Nor is there any suggestion that the gold coating disclosed in Adlhart et al '913 is equivalent to a doped diamond or doped diamond-like coating for purposes of protecting a bipolar plate in the environment of a fuel cell. Neither Lemelson nor Adlhart et al '913 provide a person of ordinary skill in the art a reasonable expectation of success using a doped diamond coating or a doped diamond-like coating on a fuel cell bipolar plate and that such would be successful in the corrosive environment of a fuel cell.

Both Lemelson and Adlhart et al '913 also teach away from the claimed invention. The disclosure in Lemelson '941 of 100 plus possible products on which a doped diamond-like coating may be deposited, none of which products is a fuel cell bipolar plate, actually teaches away from Applicant's claimed invention. Further, the Examiner's attention is also respectfully directed to Adlhart et al '913, column 4, lines 64-68 which teaches the use of gold-coated aluminum for bipolar plates. Because no equivalency between a gold coating and a doped diamond coating has been established with respect to the use of such coatings in a fuel cell environment, the Adlhart '913 teaching of the use of a gold-coated aluminum material for bipolar plates actually teaches away from Applicant's claimed invention. Withdrawal of the rejection under 35 U.S.C. 103(a) is respectfully requested.

On August 29, 2006, Applicant's counsel contacted Examiner Thomas H. Parsons to discuss alternative amendments to the claims which Applicant's counsel believed would be allowable over the prior art of record. However, no agreement was reached regarding allowable subject matter. Consequently, Applicant is filing this

U.S. Appln. No. 10/612,490  
Page 10

Proposed Amendment After Final and the attached Notice of Appeal.

Respectfully submitted,

REISING, ETHINGTON, BARNES, KISSELLE, P.C.



---

Cary W. Brooks  
Registration No. 33,361  
P. O. Box 4390  
Troy, MI 48099-4390  
(248) 689-3500

Dated: September 29, 2006